

# United States Senate

WASHINGTON, DC 20510

April 5, 2019

The Honorable Jerry Moran  
Chairman  
Subcommittee on Commerce, Justice  
Science, and Related Agencies  
Senate Appropriations Committee  
142 Dirksen Senate Office Building  
Washington, D.C. 20515

The Honorable Jeanne Shaheen  
Ranking Member  
Subcommittee on Commerce, Justice  
Science, and Related Agencies  
Senate Appropriations Committee  
506 Hart Senate Office Building  
Washington, D.C. 20510

Dear Chairman Moran and Ranking Member Shaheen,

As you consider legislation for the Commerce, Justice, Science and Related Agencies Subcommittee, we write to request that you include an additional \$4 million for the National Institutes of Standards and Technology (NIST) to conduct research on the effects of pyrrhotite on concrete—an issue critical to the states of Connecticut and Massachusetts.

Right now, homeowners, businesses, schools, and local municipalities are struggling to address a widespread problem in regions of Massachusetts and Connecticut: crumbling concrete due to the presence of a mineral known as pyrrhotite. For many years, concrete made of aggregate containing pyrrhotite from a quarry in Connecticut was used in the construction of homes, schools, condominiums and other structures in at least these two states.

Pyrrhotite reacts with oxygen and water and causes the concrete to lose its structural integrity. When poured into residential home foundations, the mineral may damage the foundation, rendering the entire home structurally unsound. Unfortunately, potentially tens of thousands of homeowners in Connecticut and Massachusetts have foundations containing pyrrhotite. The cracking of these foundations—and their ultimate collapse—can occur many years after the concrete was poured. Many homeowners will need to replace their entire foundation, the cost of which is not covered by most insurance policies. In addition, we believe that other structures are affected with this problem, including schools and potentially municipal buildings and bridges. Homeowners, business officials, and municipal officials are now testing concrete in their properties to learn whether it contains pyrrhotite and whether pyrrhotite could be causing structural issues for their property. However, more research is needed to ensure that this testing process is reliable and does not produce false negatives or false positives. In addition, research is urgently needed to understand what amount of pyrrhotite, and under what environmental conditions, can cause concrete to crack and become structurally unsound.

We urge Congress to appropriate an additional \$4 million to NIST in FY2020 to study this issue with relevant academic partners with expertise in this area. NIST is the leading federal expert in cement and concrete standards and is the appropriate clearinghouse for this research.

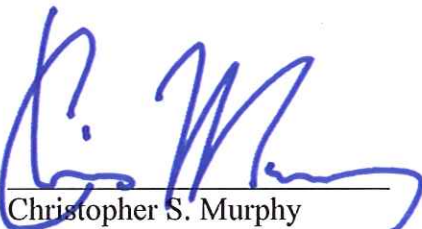
We request that the Committee include the following report language in the FY2020 Commerce, Justice, Science, and Related Agencies Appropriations bill:

“Testing Cement for Pyrrhotite Content – Of the funds provided, not less than \$4,000,000 shall be used by the National Institutes of Standards and Technology (NIST) to partner with a relevant academic institution with expertise and experience in the subject of pyrrhotite and its effect on concrete foundations to conduct a study. Using field and laboratory work as well as other tools, this study shall develop a reliable and cost-effective standard for testing for the presence of pyrrhotite in concrete used in residential, commercial, and municipal structures. The study shall also develop a risk rating scale that quantifies the amount of pyrrhotite that causes the foundation to become structurally unsound. Specifically, the study shall determine how pyrrhotite reacts with environmental substances such as water, oxygen, and sulfides, and determine to what level pyrrhotite may exist in concrete without weakening the material. The Committee directs NIST to consult, as needed, with the academic institution or institutions conducting the study to ensure NIST’s expertise in developing standards is maximized. The Committee recognizes that foundations containing concrete with pyrrhotite can crack and cause structures to collapse in several states and countries throughout the world and that more research is necessary to address the significant harm caused by concrete containing pyrrhotite.”

We would also like to make the Committee aware that the issue of pyrrhotite in concrete is not limited to New England states; it has been found in Quebec, Ireland and other countries, and it is very possible that other states may be unknowingly using concrete aggregate containing pyrrhotite. Members of the Connecticut Congressional delegation worked with House and Senate appropriators to ensure that language was included in the FY2019 appropriations package that requires the United States Geological Survey to complete a map of the presence of pyrrhotite throughout the United States. This work, in tandem with research by NIST, will help ensure that other communities are equipped to face the challenges of this problem, and to prevent this mineral from being used in concrete aggregate moving forward.

We appreciate the support that House and Senate leadership have shown in the past on the crumbling foundations issue, and we look forward to continuing to work together on this topic moving forward.

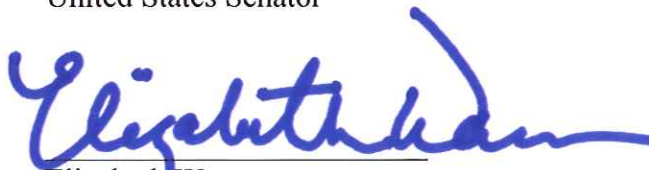
Sincerely,



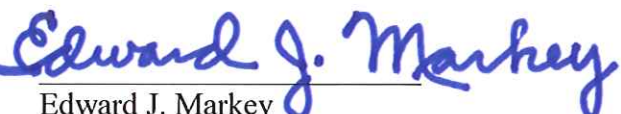
Christopher S. Murphy  
United States Senator



Richard Blumenthal  
United States Senator



Elizabeth Warren  
United States Senator



Edward J. Markey  
United States Senator